

### **REMARKS**

This amendment is responsive to the Office Action dated June 16, 2004. Applicants have amended claims 1, 2, 9-12, 15, 16, 26-28, 30, 31, and 34, canceled claims 13, 14, and 29, and added claims 37-39. Claims 1-12, 15-28 and 30-39 are pending upon entry of this amendment.

#### **Claim Rejection Under 35 U.S.C. § 112**

In the Office Action, the Examiner again rejected claims 1-11 and 34-36 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner stated that the term “a system” within the preamble of claim 1 is inconsistent with the term “a removable component” used in claim 1 and also inconsistent with the term “a printed circuit board” as used in the dependent claim 9. The Examiner asserted that the use of these terms renders the scope of the claim 1 vague and indefinite because “it is unclear if the intent is to claim either the subcombination of the ‘a system’ alone or the combination of ‘a system’ and ‘a removable component’ and/or ‘a printed circuit board.’”

Applicants have amended claim 1 for purposes of clarity without surrendering claim scope. Applicants traverse the rejection of claims 1-11 and 34-36 under 35 U.S.C. 112, and submit that claims 1-11 and 34-26 particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. 112, second paragraph.

Claim 1 is directed to a system, and recites certain elements. In particular, claim 1, as amended, recites a removable electrical component, and a housing to receive the removable electrical component. Claim 1 further requires an assembly coupled with the housing and having a pin, and a rotatable drive shaft coupled with the removable component to engage the assembly. The drive shaft includes a first helical groove to receive the pin and guide the pin along the shaft. Dependent claim 9 limits the term removable electrical component of claim 1 to be a printed circuit board. Consequently, the removable electrical component, which may be a printed circuit board, is one element of the overall system of claim 1.

An example of such a system is shown in FIGS. 1-4 of the present application. FIG. 4, for example, illustrates a housing 110 of a network router that receives a printed circuit board 60 as a removable component. Receptacle assembly 18A is coupled to housing 110 and includes

pin 48B. Rotatable drive shaft 14 is coupled to the printed circuit board 60, and has a first helical groove 50 that receives pin 48B. When the operator rotates handle 16 clockwise, drive shaft 14 rotates, causing pin 48B to follow first helical groove 26. As this occurs, drive shaft 14 facilitates the entry of pin 48B into first helical groove entry 50, and printed circuit board 60 is inserted into housing 110. A counter-clockwise rotation may be used to easily remove printed circuit board 60 from housing 110.

Applicants submit that claims 1-11 and 34-36, as amended, particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. 112, second paragraph, and respectfully request withdrawal of the rejection.

### **Claim Rejection Under 35 U.S.C. § 102**

#### ***Claims 1, 2 and 7-8***

In the Office Action, the Examiner rejected claims 1, 2, and 7-8 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 243,035 to G. Geer ("Geer"), which issued on June 14, 1881. Applicants respectfully traverse the rejection to the extent such rejection may be considered applicable to the amended claims. Geer fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

With respect to amended claim 1, for example, Geer fails to teach or suggest a removable electrical component and a housing to receive the removable electrical component. Moreover, Geer fails to teach an assembly coupled with the housing, and a rotatable drive shaft coupled with the removable electrical component to engage the assembly, wherein the drive shaft includes a first helical groove to receive a pin of the assembly and guide the pin along the shaft.

To the contrary, Geer describes an apple parer for coring and slicing apples. In rejecting claims 1, 2 and 7-8, the Examiner states that Geer describes an apple parer having a u-shaped frame *A* and a spirally-grooved shaft *B* that may be cranked longitudinally to core and slice an apple. The Examiner asserts that "an apple is a removable component and moves relative to the housing."

Applicants respectfully disagree. Contrary to the Examiner's assertion, Geer does not describe a housing or a removable component, and certainly fails to describe a rotatable drive shaft coupled with a removable electrical component, as recited in Applicants' amended claim 1.

Specifically, to the extent the u-shaped frame *A* of the apple parer of Geer can even reasonably be construed as a "housing," Geer does not describe any electrical component removable from the housing by use of a rotatable drive shaft. For example, even if the shaft of Geer is fully rotated in both directions, no components are inserted into or removed from the "housing" of Geer. On the contrary, the shaft itself always remains within the u-shaped frame.

While the Applicants continue to disagree that the u-shaped frame *A*, as described in Geer, could be reasonably construed as a "housing," the Applicants also submit that an apple, used in conjunction with the device described in Geer, could not be reasonably construed as a "removable component." An apple is not a component of the apple parer described in Geer anymore than a wooden log is a component of a chainsaw. Applicants have amended claim 1 to clarify that the removable component is a removable electrical component.

In addition, even if it is assumed the U-shaped frame *A* of the apple parer is a "housing" and an apple could be viewed as the "removable component," Geer still fails to disclose the subject matter of claim 1. For example, the Examiner has asserted FIG. 4 disclosed, "[A]n assembly coupled with the housing, the assembly including a pin." However, the assembly of FIG. 4 does not comprise a pin. The assembly of FIG. 4 only consists of a latch-nut *e*, a spring *d*, and a fork *a*. Geer likewise fails to disclose a pin anywhere else. Therefore, Geer fails to disclose "a first helical groove to receive the pin and guide the pin along the shaft." Further, the Examiner even apparently agrees that Geer fails to disclose a pin. For example, the Examiner stated in paragraph 10 of the Office Action dated June 16, 2004, "Geer fails to disclose a pin disposed within the throughbore."

Moreover, Geer fails to teach or suggest a detent forming a terminus of the first helical groove and configured to receive the pin, as recited by Applicants' claim 7. With respect to claim 7, the Examiner merely refers to the "beginning groove" of the spirally-grooved shaft *B* of the Geer apple parer. However, the beginning of the spirally-grooved shaft does not act as a terminus for the pin. To the contrary, the term "terminus" is defined as "the final point; the

end.”<sup>1</sup> This definition is consistent with the disclosure in the present application, which states that as drive shaft is rotated clockwise, the pin traverses the helical grooves and ultimately reaches a terminating detent. As pin reaches the end of first helical groove, a compression spring expands and forces the pin into the detent to terminate its traversal within the helical groove, thus preventing further rotation.

Geer fails to describe a helical groove having a detent at all, let alone a detent forming a terminus. In fact, in direct contrast, Geer requires a “stop” upon the frame itself.<sup>2</sup> For at least these reasons, Geer fails to teach or suggest a compression spring arranged so that as the pin travels along a portion of the first helical groove the compression spring is compressed and causes the pin to enter the first detent, as required by Applicants’ claim 8.

While the Applicants continue to disagree with the Examiner’s rejection of claims 1, 2, 7 and 8, in the interests of expediting allowance of the pending claims, the Applicants have amended claim 1 to clarify that the removable component is an electrical component.

Geer fails to disclose each and every limitation set forth in claims 1, 2, 7 and 8. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicants’ claims 1, 2, 7 and 8 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

### ***Claims 26-30***

In the Office Action, the Examiner rejected claims 26-30 under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,939,908 to Ewing et al. (“Ewing”). However, the Examiner objected to claims 29 and 34-36 as including subject matter that would be allowable if rewritten in independent form. In this amendment, Applicants have cancelled claim 29 and amended independent claim 26 to include elements of claim 29. Consequently, claims 26-28 and 30 are in condition for allowance.

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<sup>1</sup> *The American Heritage® Dictionary of the English Language, Fourth Edition.*

<sup>2</sup> *Page 2, ll. 110-113.*

### ***Claims 31-33***

In the Office Action, the Examiner also rejected claims 31-33 under 35 U.S.C. 102(b) as being anticipated by Geer. Applicants respectfully traverse the rejection to the extent to the extent such rejection may be considered applicable to the amended claims. Geer fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

The Examiner has given no explanation or reasoning in rejecting claims 31-33. The Applicants make no assumption as to the reasoning behind the rejection of claim 31, and the following arguments only serve to point out exemplary differences between claimed subject matter and the disclosure in Geer.

As one example of its deficiencies, Greer fails to teach or suggest means for coupling a drive shaft to a removable electrical component, as required by amended claim 31. As another example, Greer fails to teach or suggest means for coupling a drive shaft to a removable electrical component to assist in the insertion and extraction of the removable electrical component from an electrical device, as further required by amended claim 31.

Claims 32 and 33 are dependent on claim 31, and are allowable for at least these reasons. Additionally, with respect to claim 33, Geer does not disclose “means for securing a handle.” In contrast, FIG. 1 of Geer shows a crank *b* that may rotate freely in at least one direction at all times.

Geer fails to disclose each and every limitation set forth in claims 31-33. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicants’ claims 31-33 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

### ***Claim 16***

In the Office Action, the Examiner referred to claim 16 in paragraph 5, “Claim 16 is rejected as noted above in Paragraph 4.” However, the Examiner did not mention claim 16 in paragraph 4, and fails to offer an explanation of the rejection of claim 16 anywhere else. Consequently, the Examiner’s position on the subject matter of claim 16 is unclear. However, in support of claim 16, Applicants point out that Ewing and Geer both fail to disclose “a spring surrounding a portion of the drive shaft within the housing” as recited by claim 16. For at least

these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicants' claim 16 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

**Claim Rejection Under 35 U.S.C. § 103**

In the Office Action, the Examiner rejected claims 3-6 and 18-23 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of U.S. Pat. No. 4,615,274 to Hoehn ("Hoehn"). In addition, the Examiner rejected claim 9 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of Ewing. The Examiner rejected claims 10, 11, 24 and 25 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of U.S. Pat. No. 6,354,119 to Molzer ("Molzer"). The Examiner also rejected claims 12-15 and 17 as being unpatentable over Geer in view of U.S. Pat. No. 6,213,487 to Doroftei ("Doroftei").

Applicants respectfully traverse these rejections. The applied references, alone or in combination, fail to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability to combine the references to arrive at the claimed invention.

As a preliminary matter, Applicants respectfully point out that the Examiner asserts that it would have been obvious to one skilled in the art to modify the apple parer of Greer with: (1) a chain conveyor for robotic production as described by Hoehn, (2) an electronic apparatus for adjustably controlling the size of an ice bank formed around cooling coils as described by Ewing, (3) a door handle and a lock described by Molzer, and (4) a wheelchair described by Doroftei. Applicants submit that these assertions are logically deficient in that the Examiner has failed to provide substantial evidence in the record for a motivation in the prior art for the proposed modifications, as is required to establish a prima facie case of obviousness under 35 U.S.C. 103(a). Further, modification to the apple parer described by Greer would still fail to achieve Applicants claimed invention.

The Court of Appeals for the Federal Circuit has established that motivation to combine references must be found in the prior art, and that it is impermissible hindsight for the Examiner to use the motivation stated in Applicants' own disclosure as a blueprint to reconstruct the

claimed invention from the prior art.<sup>3</sup> Moreover, it is insufficient to merely pull such motivation out of thin air. Rather, the Examiner's rejection must be based on substantial evidence in the record demonstrated that the motivation for making the claimed invention resides in the prior art.<sup>4</sup> In summary, the Examiner's conclusion of obviousness is unsupported by evidence in the record.

### ***Claims 3-6***

With respect to claims 3-6, the Examiner proposes to modify the apple parer of Geer with a chain conveyor for robotic production operations described by Hoehn. Hoehn, however, lacks any teaching or suggestion of any of the elements recited by claims 3-6. With respect to claim 3, for example, Hoehn lacks any teaching of a first helical groove entry having a width greater than a width of the first helical groove, wherein at least a portion of the first helical groove entry is defined by a first inclined entry guide. With respect to claims 4 and 5, Hoehn lacks any teaching or suggestion of a first groove point disposed at a first end of the first inclined entry guide, and a transition portion disposed between the first inclined entry guide and the first helical groove.

In rejecting claims 3-6, the Examiner summarily references FIG. 4 that illustrates a helical drive shaft. FIG. 4, however, appears to show a helical groove with a constant width and, therefore, does not show helical groove entry having a width greater than a width of the first helical groove, as required by claim 3. Moreover, FIG. 4 does not show an inclined entry guide at all, let alone an inclined entry guide having a groove point disposed at the end of the first inclined entry guide, as required by claims 4 and 5. In contrast, FIG. 4 of Hoehn shows the groove simply terminating in a conventional fashion.

For clarification purposes, Applicants refer the Examiner to FIG. 2B of the present application, which clearly illustrates one embodiment of a widened structure of first helical groove entry which transforms into the first helical groove. As illustrated, first and second helical groove points 34, 56 form the upper and lower (as illustrated) boundaries of entry 50.

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<sup>3</sup> See *Interconnect Planning Corp. v. Feil*, 227 USPQ 543 (CAFC 1985); see also *In re Fine*, 5 USPQ2d 1596, 1598 (CAFC 1988); see also *In re Gorman*, 18 USPQ 2d 1885, 1888 (CAFC 1991); see also *Al-Site Corp. v. VSI International, Inc.*, 50 USPQ2d 1161, 1171 (CAFC 1999).

<sup>4</sup> *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002); *In re Chu*, 36 USPQ2d at 1094.

Groove points 34, 56 taper towards each other along first and second inclined entry guides 52, 54, which eventually channel into first helical groove 26.

With respect to claim 6, as amended, Hoehn fails to describe a drive shaft having two grooves at all, let alone a second helical groove having a second helical groove entry including a second groove point, wherein at least a portion of the second helical groove entry is defined by a second inclined entry guide.

Moreover, as stated above, the Examiner's assertion that it would have been obvious to one of ordinary skill in the art to modify the apple parer of Geer with a chain conveyor for robotic production operations described by Hoehn is unreasonable and not supported by substantial evidence. One skilled in the art would not look to a conveyor for transporting cars to modify an apple parer. Moreover, the Examiner has not pointed to any motivation in the art for such a modification. The Examiner asserts that one of ordinary skill in the art would modify the apple parer of Geer "for the purpose of efficiently and economically indexing products." This assertion is flawed as the motivation is not found within the art, as is required. Moreover, how does this motivation teach or suggest modification of an apple parer where no products are involved, let alone indexed?

### ***Claim 9***

With respect to claim 9, neither Geer nor Ewing teach a rotatable drive shaft coupled with a printed circuit board that is fully inserted and extracted through rotation of the drive shaft that engages an assembly coupled to a housing. As described above, Geer is directed to an apple parer and does not describe a removable component whatsoever. Ewing describes an apparatus for adjustably controlling the size of an ice bank, and shows a printed circuit board internally mounted within a housing using a screw. Consequently, Ewing does nothing to overcome the deficiencies with of Geer, and does not teach or suggest a rotatable drive shaft coupled to a removable printed circuit board that is fully inserted and extracted through rotation of the drive shaft that engages an assembly coupled to a housing.

In rejecting claim 9, the Examiner asserted that it would be obvious to one of ordinary skill in the art to modify the apple parer of Geer "by inserting and extracting a printed circuit board through rotation of the drive shaft, as taught by Ewing, for the purpose of electrically



communicating with other electronic devices.” Again, the assertion is not based upon substantial evidence, which is required.<sup>5</sup>

In paragraph 14, “Response to Arguments,” the Examiner simply restates his earlier assertion that, “It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Geer by inserting and extracting a printed circuit board through rotation of the drive shaft, as taught by Ewing, for the purpose of electrically communicating with other electronic devices.” This response by the Examiner is merely illustrative and provides no additional support for the rejection of claim 9.

### ***Claims 10-11***

With respect to claim 10, neither Geer nor Molzer teach or suggest a locking device configured to prevent rotation of the handle relative to the removable electrical component when the locking device is engaged. With respect to claim 11, neither Geer nor Molzer teach or suggest that the locking device further comprise a threaded member disposed within the handle to prevent rotation of the handle relative to the removable electrical component. As described above, Geer is directed to an apple parer and does not describe a removable electrical component whatsoever. Molzer describes a door handle and a lock that may be used, for example, with a front door of a house. Consequently, Molzer does nothing to overcome the deficiencies with of Geer with respect to a removable electrical component.

In rejecting claim 10, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to modify the apple parer with a door handle and lock described by Molzer. Again, not only would such a modification fail to achieve Applicants’ invention, but also the assertion Examiner has not introduced substantial evidence that the prior art provide motivation for the proposed modification. Applicants submit that a person of ordinary skill in the art would have found no reason to modify an apple parer with a door handle and lock.

### ***Claims 12-15 and 17***

In the Office Action, the Examiner rejected claims 12-15 and 17 under 35 U.S.C. 103(a) as being unpatentable over Geer in view of Doroftei. Applicants respectfully traverse the

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<sup>5</sup> *In re Lee*, 61 USPQ2d 1430, (CAFC 2002).

rejection. The applied references fail to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention. The Examiner's comments in paragraph 10 of the Office Action do not even account for each limitation of independent claim 12. For example, neither Geer nor Doroftei disclose a "first enlarged entry" or a "receptacle assembly" as recited in claim 12. The Examiner did not address these limitations.

Additionally, the notion that a person of ordinary skill in the art would have been motivated to modify Geer "by disposing a pin within the throughbore, as taught by Doroftei, for the purpose of protecting the pin from the environment," as suggested in paragraph 10 of the Office Action dated June 16, 2004, has no basis in the prior art. Furthermore, in reference to Geer, putting a pin inside of a throughbore of part *A* would defeat the efficiency of the device disclosed by Geer, one of the explicit purposes cited in Geer.<sup>6</sup> If part *A* comprised a pin inside a throughbore, the drive shaft *B* could not be readily withdrawn after an apple had been pared. The device in Geer is designed to be cranked in a first direction, thereby paring, coring and slicing an apple; then, once that is done, latch-nut *e* is withdrawn from shaft *B* to allow shaft *B* to be quickly pulled back so that another apple can be pared, cored and sliced. Instead the Examiner's proposed modification would require the device of Geer to be cranked backwards, before another apple could be pared, cored and sliced. Clearly there is no incentive for one skilled in the art to modify Geer to include a pin in a throughbore of part *A* because it would substantially reduce the usefulness of the device disclosed in Geer.

With respect to claim 17, Geer and Doroftei lack any teaching of a first inclined entry guide as claimed. In Geer, drive shaft *B* does not comprise an inclined entry guide. It merely comprises a helical thread.

### ***Claims 18-23***

The Examiner argues that a person of ordinary skill in the art would have been motivated to modify the apple parer of Geer with a chain conveyor for robotic production operations described by Hoehn to achieve applicants' invention. Hoehn, however, lacks any teaching or

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<sup>6</sup> Page 1, l. 11.

suggestion of many of the elements recited by claims 18-23. With respect to claims 17 and 18, for example, Hoehn lacks any teaching of an inclined entry guide as claimed. As another example, with respect to claim 19, Hoehn lacks any teaching or suggestion of a groove point as claimed.

In rejecting 18-23, the Examiner summarily references FIG. 4 that illustrates a helical drive shaft. FIG. 4, however, appears to show a helical groove with a constant width and, therefore, does not show an inclined entry guide as required by claims 17 and 18, an enlarged entry as required by claim 12, or a second enlarged entry as required by claims 20-23. Moreover, FIG. 4 does not show an inclined entry guide having a groove point disposed at the end of the first inclined entry guide, as required by claim 19. In contrast, FIG. 4 of Hoehn shows the groove simply terminating in a conventional fashion.

#### ***Claims 24 and 25***

The Examiner argues that a person of ordinary skill in the art would have been motivated to modify the apple parer of Geer with a handle and lock described by Molzer to achieve Applicants' invention. With respect to claim 24, neither Geer nor Molzer teach or suggest a locking device configured to prevent rotation of the handle relative to the removable device when the locking device is engaged. With respect to claim 25, neither Geer nor Molzer teach or suggest that the locking device further comprise a threaded member disposed within the handle to prevent rotation of the handle relative to the removable device. As described above, Geer is directed to an apple parer and does not describe a removable component whatsoever. Molzer describes a door handle and a lock that may be used, for example, with a front door of a house. Consequently, Molzer does nothing to overcome the deficiencies with of Geer with respect to a removable device.

In rejecting claims 24 and 25, the Examiner asserted that it would have been obvious to one of ordinary skill in the art to modify the apple parer with a door handle and lock described by Molzer. Again, such a modification would fail to achieve Applicants' invention, and the motivation for the proposed modification is not based upon substantial evidence set forth in the record.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicants' claims 3-6, 9-15 and 17-27 under 35 U.S.C. 103(a). Withdrawal of these rejections is requested.

**Allowable Subject Matter**

In the Office Action, the Examiner objected to claims 29 and 34-36 as including subject matter that would be allowable if rewritten in independent form. In this amendment, Applicants have amended independent claim 26 to include elements of claim 29 and cancelled claim 29. Consequently, claims 26-28 and 30 are in condition for allowance.

**New Claims:**

Applicants have added claims 37-39 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicants' new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. As one example, the references fail to disclose or suggest a system comprising a housing for an electrical device; an assembly mounted to the housing, the assembly including a pin; and a rotatable drive shaft mounted to the printed circuit board to engage the assembly and assist in the insertion and extraction of the printed circuit board, wherein the drive shaft includes a first helical groove to receive the pin and guide the pin along the drive shaft and urge the printed circuit board linearly into the electrical device, as recited by claim 37. No new matter has been added by the new claims.

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Responsive to Office Action mailed June 16, 2004

### CONCLUSION

All claims in this application are in condition for allowance. Applicants respectfully request reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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